

## CROSS-EXAMINING AUTO ON WHY IT WON'T RUN

Finding Out What's Wrong Is Like  
Hunting for Criminal.

Finding out the trouble with an automobile when it won't run is, according to experts, like running down a crime. It is a process of cool and logical elimination. The motorist, unless he be an expert himself, reading sounds and signs with swift and unfailing accuracy as to their cause, should first clear his mind of all prejudices and passion. Every misconception should be magnanimously dismissed from his thoughts, no matter how great his haste, how inclement the weather, before seeking the truth and nothing but the truth, he begins to cross-question the auto by trying one part after another.

Now is the process of elimination one which the motorist may follow according to his own notion. As in the courts of justice, and in the laboratory of the chemist, and of the mechanical engineer, there is a right order in seeking out the true cause. What this order is for the stalled automobile, H. C. Brokaw, principal of the West Side Young Men's Christian Association Automobile School, New York, describes in the following:

"If the engine stops on the road and pressing the starter pedal fails to start it, the first thing to do is to get the crank out of the too hot and overheat engine. If with the gears in neutral, the engine cranks but fails to start, it indicates a lack of lubricating oil or a lack of water, which has allowed the engine to reach the temperature where the lubricant failed to perform its work. If the engine turns over fairly easy it is not necessary to look for oil or water trouble.

### Test for Compression.

The next test is for compression. If the driver is not experienced and is unable to test simply by the resistance to the starting crank if each cylinder has compression, he should open all petcocks except on one cylinder and turn the crank two revolutions, noting if there is a resistance for one-quarter of a revolution in the two revolutions. Compression occurs only on one stroke of the piston in the four-stroke cycle. Each cylinder should be tested in a similar manner, opening all petcocks except on the cylinder being tested; see if the compression is practically equal in all cylinders.

"If one cylinder has very weak or no compression, the trouble will be found usually in the exhaust valve. First, examine the push rod to see if there is clearance between it and the valve when the valve is supposed to be closed; if there is, the valve must be lifted out and the valve and seat inspected for carbon. Sometimes a piece of carbon will lodge on the valve seat and due to the hammering of the valve, will become fastened to valve or seat. For temporary repair generally it can be scraped off with a knife and the valve be ground off upon reaching the garage.

"If the trouble is not in the exhaust valve, it might be in the inlet valve. In some type of engines the valve head may break off and get into the cylinder and when the piston comes up punch a hole in the piston head. A petcock must be loose so that it will let open sufficiently to affect the compression and so cause the cylinder to make fire. These troubles usually are confined to one cylinder and not to the whole engine.

"The gasoline is the next to be inspected. Is there gasoline in the bowl of the carburetor? This may be determined by inspection, opening drain cock or 'tickling'—flooding. If not, examine gasoline tank and see if there is a supply; then see if the shutoff valve in the line leading to the carburetor is open; if so, drain the bowl of the carburetor to get rid of possible water and dirt. To check the possible clogging of gasoline pipe or carburetor screen, notice if the bowl fills up again in a reasonable time.

### Do Not Adjust Carburetor.

"Do not adjust the carburetor. If the engine has been running it is practically certain that the carburetor has not been come out of adjustment. Inspect the intake pipe, or manifold, to see if it has been loosened by vibration. If the engine still refuses to run, put about a tablespoonful of gasoline in each cylinder and crank over the engine. If this runs the engine a few revolutions it indicates that the trouble is in the gasoline system and leaves but the spray nozzle, which may have dirt lodged in it, or the auxiliary air valve, which may be stuck, as remaining causes.

"Next inspect the ignition system. The first thing to do is to loosen one of the wires from a spark plug and lay or hold it so the bare end will be one-eighth of an inch from the base of the plug and have some one crank the engine by hand or with the starter. If a spark does not occur, first to the interrupter points and short circuit the fixed point with a screwdriver or other metal tool and see if there is a spark. Examine the points for dirt and see if they come together and open properly. Then examine the condition of the battery, testing it. Examine the connections on the battery, which sometimes jar loose; examine the wires leading to the interrupter switch; see if they are loose, or broken, or short circuited. This need not be done if the spark shows at the interrupter.

"Examine the distributor for moisture or dirt and see if the wires have become loose. If a magnet only is used, it is a simple matter to see if the interrupter points are making and breaking properly and if the distributor is clean and dry. If these appear to be all right the trouble is doubtless in the armature winding or the condenser and cannot be repaired upon the road."

## CAR SHORTAGE HURTS DELIVERY OF AUTOS

Situation a Menace to Entire Country.  
Manufacturers Believe.

Automobile dealers and the automobile buying public will be in store for many disappointing delays in the delivery of their new cars this spring unless they join forces immediately in an effort to relieve the great freight car shortage.

Already the automobile industry has suffered heavily and it is now threatened with an enforced slump in production because there is no outlet for the product. This situation is due partly to the exceptionally heavy freight business, and partly to the fact that thousands of specially built automobile freight cars are being seized by railroads and shippers in all parts of the country and held for their own use.

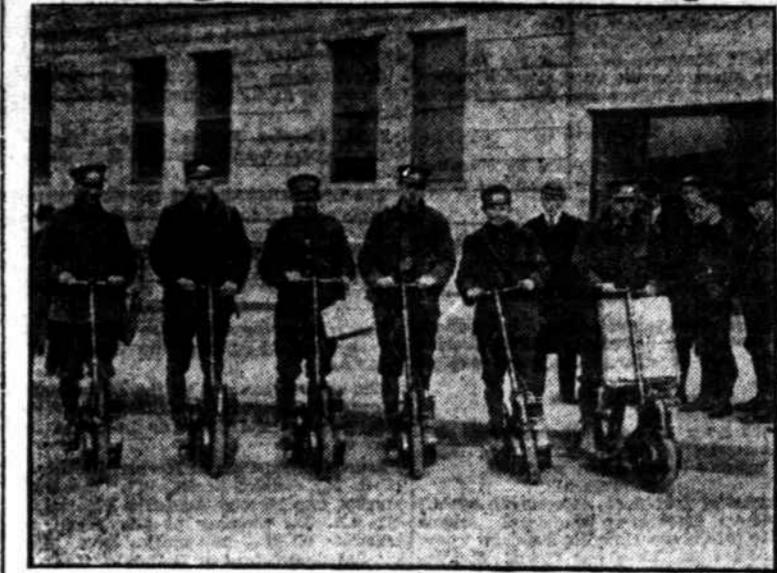
Thus the motor car manufacturers are deprived of the special facilities with which they had the foresight to equip themselves many months before the shortage. Their cars are being used to haul farm products—fruits, potatoes and everything imaginable.

Meanwhile the big automobile plants in Detroit are forced to depend on the very limited supply of the ordinary box car units and since these have been wholly inadequate since storage space in many instances has been exhausted, it has been necessary to cut down far below the normal production.

In view of the tremendous demand for motor cars already in prospect for the coming spring and summer, this condition will result in a decided underproduction unless there is relief soon.

One must fight as an archangel for freedom but in freedom one must live as a saint.—Spartan prover.

## Mail Gathering by Autoped Being Given Test In Capital



The above picture illustrates a group of men gathered around a vintage-style delivery van or truck. Several men are standing near the vehicle, some holding packages or equipment. The scene appears to be a demonstration or a test of the vehicle's delivery capabilities.

### AUTOMOBILE LICENSES.

FEBRUARY 21.

1916—Mrs. O. R. Evans, 129 16th st. nw, Frankfort, 1917.  
1916—Swift & Co., Center Market, Ford, 1917.  
1916—Frank Millburn, Union Savings Bank, Bunker Hill, 1917.  
1916—Joe A. Gier, 619 F st. ne, Dodge, 1916.  
1916—A. Solomon, 185 16th st. nw, VW, 1916.  
1916—W. L. Alexander, 64 Randolph st. nw, Ford, 1917.  
1916—John Wilson, 1690 Madison st. nw, Ford, 1917.  
1916—J. W. V. Lovell, 204 F st. ne, Ford, 1917.  
1916—Edgar Spillman, Baltimore, Md., Overland, 1916.  
1916—Samuel Heifrich, Baltimore, Md., Standard, Baker, 1916.  
1916—Howard Schaffer, Baltimore, Md., Chalmers, 1916.  
1916—William Doughty, Baltimore, Md., Ford, 1916.  
1916—W. L. Coover, Baltimore, Md., Locomobile, 1916.  
1916—Frank R. Gamma, 618 17th st. ne, Buick, 1916.  
1916—Postmen Electric Power Co., Cleveland, Ohio, Ford, 1916.  
1916—W. E. Miller, 100 B st. nw, Dodge, 1916.  
1916—W. Page, 225 Mass. ave. nw, VW, 1916.  
1916—Flemishman Test Co., 318 F st. na, Ford, 1916.  
1916—K. W. Toff, Stonegate court, Baker, 1916.  
1916—Chas. R. Church, 431 16th st. nw, Ford, 1916.  
1916—Frank R. Gamma, 618 17th st. ne, Buick, 1916.  
1916—Postmen Electric Power Co., (Ind.), 1138 Canal ave. nw, demonstrating.  
1916—W. E. Miller, 100 B st. nw, Dodge, 1916.  
1916—L. Allen, Congress Heights, D. C., Paige, 1916.  
1916—Mrs. Charles F. Larabee, 154 16th st. nw, Cadillac, 1916.  
1916—W. Marshall, The Champion apt., Veto, 1916.  
1916—Univer Motor Co., (Ind.), 1138 Canal ave. nw, demonstrating.  
1916—The F. H. Smith Co., 211 16th st. nw, VW, 1916.  
1916—Elmer Pyle, Silver Hill, Md., Ford, 1916.  
1916—R. L. Christian, 151 16th st. ne, Ford, 1916.  
1916—Jacqueline G. Walsh, 105 Fontaine court, Auburn, 1916.  
1916—Samuel Shapiro, 207 Irving st. nw, Ford, 1916.  
1916—Anton Czerny, 265 Ge. ave., Ford, 1916.  
1916—Elizabeth E. Jones, 169 B st. ne, Ford, 1916.  
1916—J. H. Wilson, 1125 Potomac ave. nw, Royal.  
1916—T. W. Lester, 207 F st. nw, Chevrolet, 1916.  
1916—H. L. Bailey, 204 F st. nw, Cole, 1916.  
1916—John Keane, Center Market, Ford, 1916.  
1916—The C. & T. Co., 122 16th st. nw, Ford, 1916.  
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1916—John D. Bishop, 187 16th st. nw, Dodge, 1916.  
1916—L. I. Botham, Mechanicville, Md., Ford, 1916.  
1916—J. F. Wright, Baltimore, Md., Packard, 1916.  
1916—W. E. West, Bensenville, W. Va., National, 1916.  
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